

Headquarters U.S. Air Force

Integrity - Service - Excellence

Pizza Lunch

Introduction to War Gaming



Maj Garretson
Future Concepts and
Transformation
22 June 2005

U.S. AIR FORCE



AF/XPXC Mission: *Explore, develop, advocate and link future concepts, capabilities, promising technologies and their program funding to continue transforming the Air Force into a more effective fighting force.*



- **Think 2018 to 2035 (beyond Future Years Defense Plan (FYDP))**
- **Revolutionary Planning: AF Horizons 21**
- **Strategic issues of American Competitiveness and Aerospace Don**
- **AF Futures War Game**
- **AF Transformation Flight Plan**



Why Wargame?

- **War Gaming is an analytical tool to examine complex and stressing scenarios**
 - Highlights key capabilities and shortfalls
 - Identifies questions for future study
 - Less about “who” than about “how” and “what”
- **May involve a single scenario with few players, or complex scenarios with Red and Blue teams and analytical tools**
- **Determine what capabilities and tactics will be required for success in future wars and operations other than war, and plan and budget for them**



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USAF Wargaming

(AFI 10-2305)

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Two USAF War Games
authorized by U.S. Code
(Title X), typically
conducted in alternating
years

*Lessons
Learned to
Further Explore*



Service
Responsibility

**FORCE
STRUCTURES and
CAPABILITY**

Headquarters Air Force Strategic
Planning Directorate (HAF/XPX)

Actionable
Insights

*Lessons
Learned to
Further Explore*

Near/Mid-Term (<15
yrs)

Far-Term (>15 yrs)

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Scenario Overview

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- **Trouble in Country/Region X**
- **US Policy is Y**
- **US Military is tasked to do Z**

***Difficult scenario compels game-players to
challenge pre-conceived notions***

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Scenario



It's 2025...

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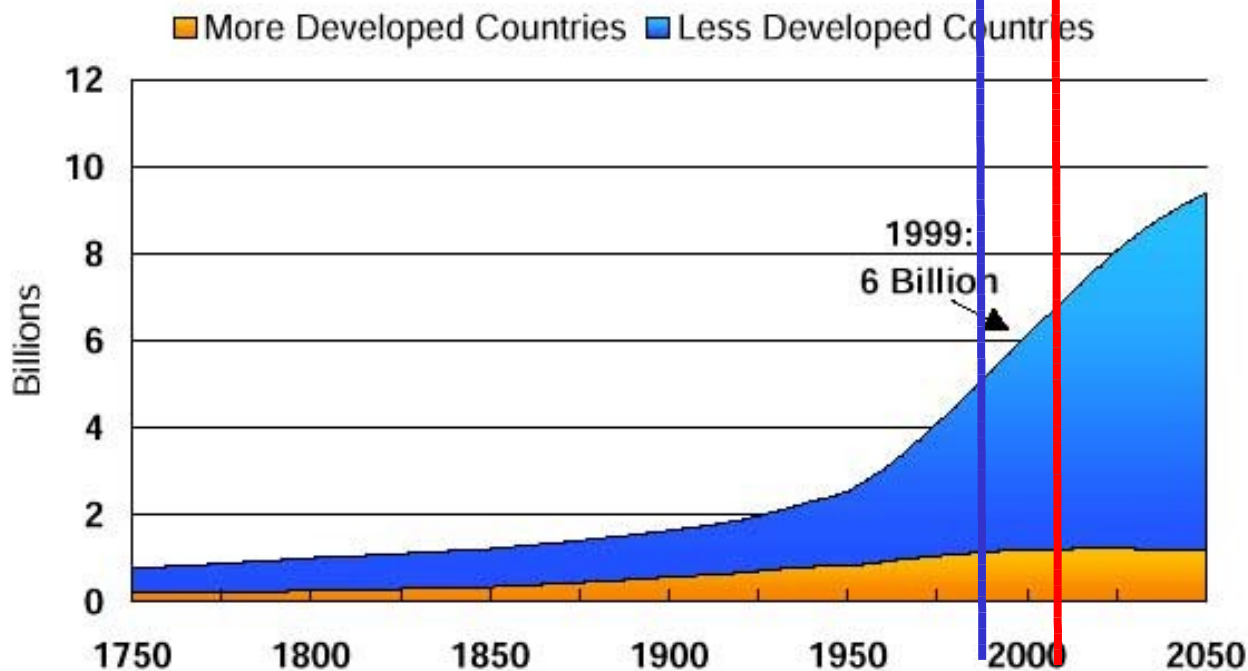


World Population has grown by 2 Billion people

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World Population Growth

Population growth, 1750-2050



Sources: Before 1950: PRB estimates; 1950-2050: UN, *World Population Projections to 2150*, 1998 (medium scenario).

PRB









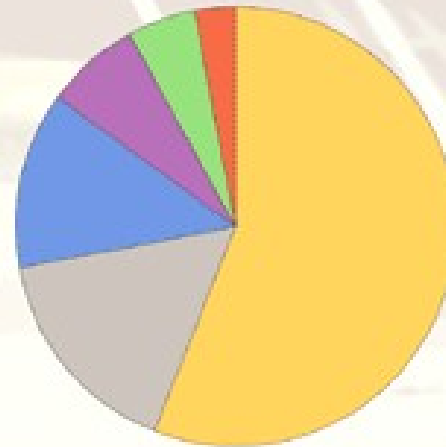
Globalism has an Asian Face

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Telescoping the Population of the World to 2020

To appreciate the projected population mix of the world's more than 7.8 billion people in 2020, we projected this breakdown of a representative group of 100 people:

-  Fifty-six of them would be from Asia, including 19 Chinese and 17 Indians.
-  Sixteen would be from Africa, including 13 from Sub-Saharan Africa.
-  Thirteen would be from our hemisphere, with only four from the United States.
-  Seven would be from Eastern Europe and the former Soviet Union.
-  Five would be from Western Europe.
-  Three would be from the Middle East.



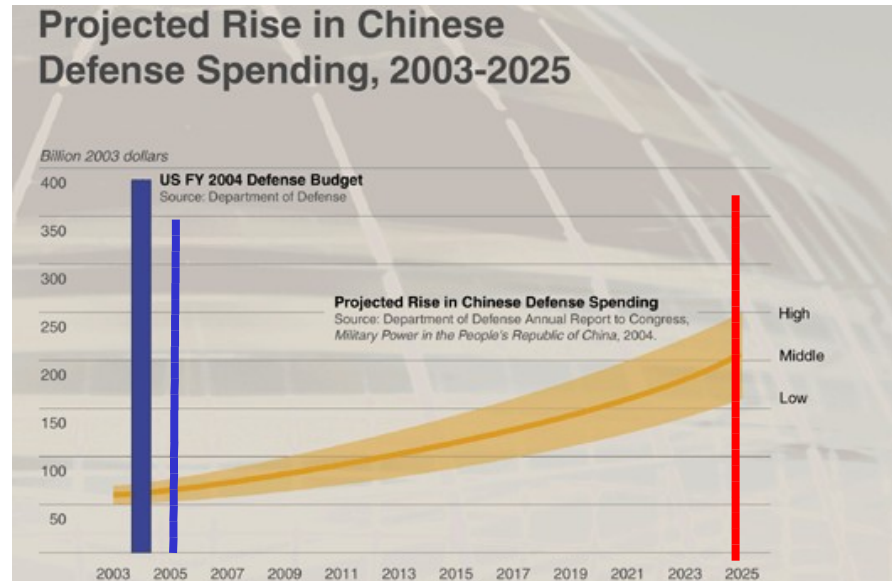
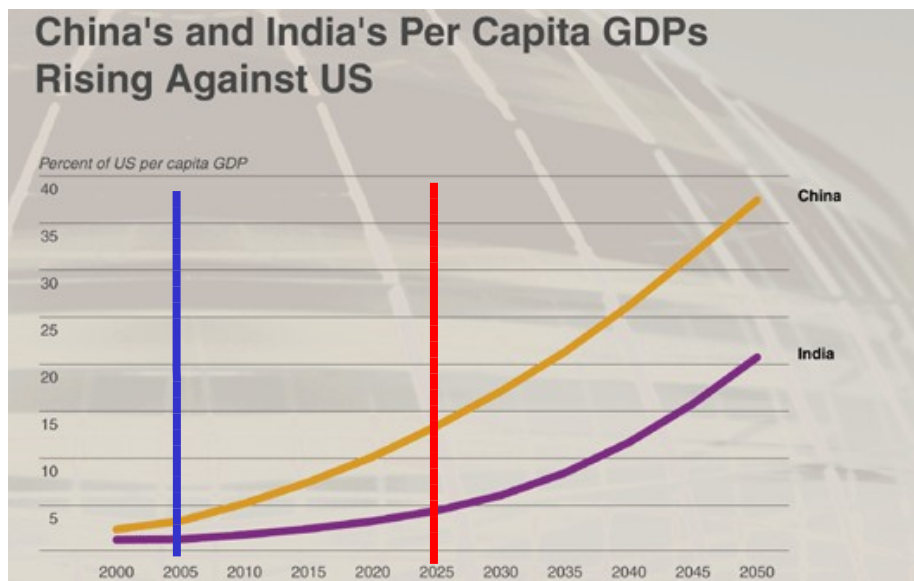
Source: CIA Mapping the Global Trends



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China is the dominant military and Economic Power



Source: CIA Mapping the Global Trend

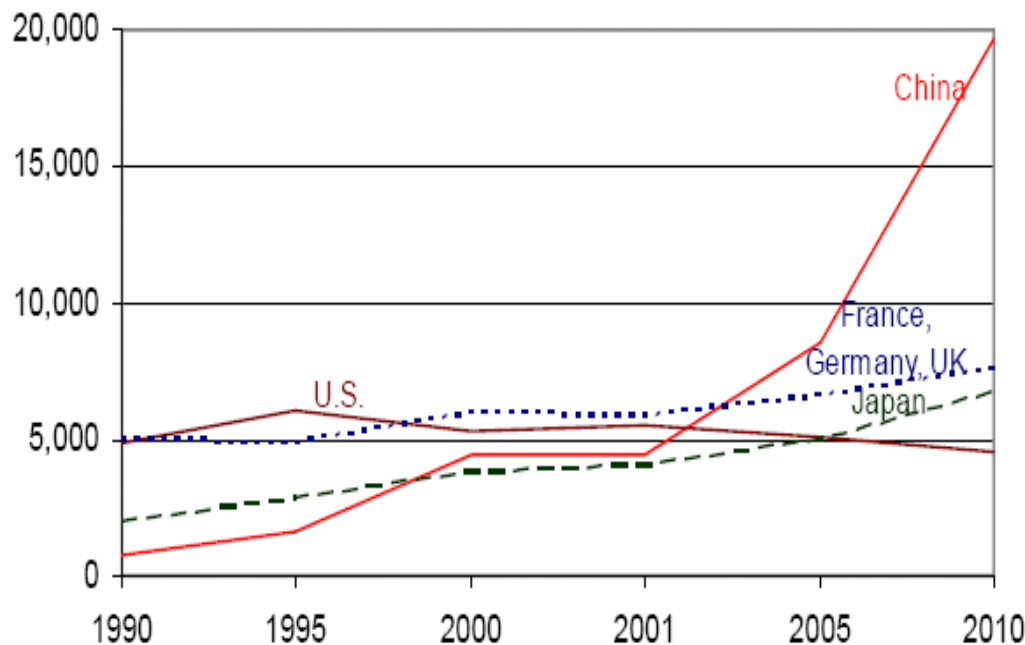


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And intellectual & technological power

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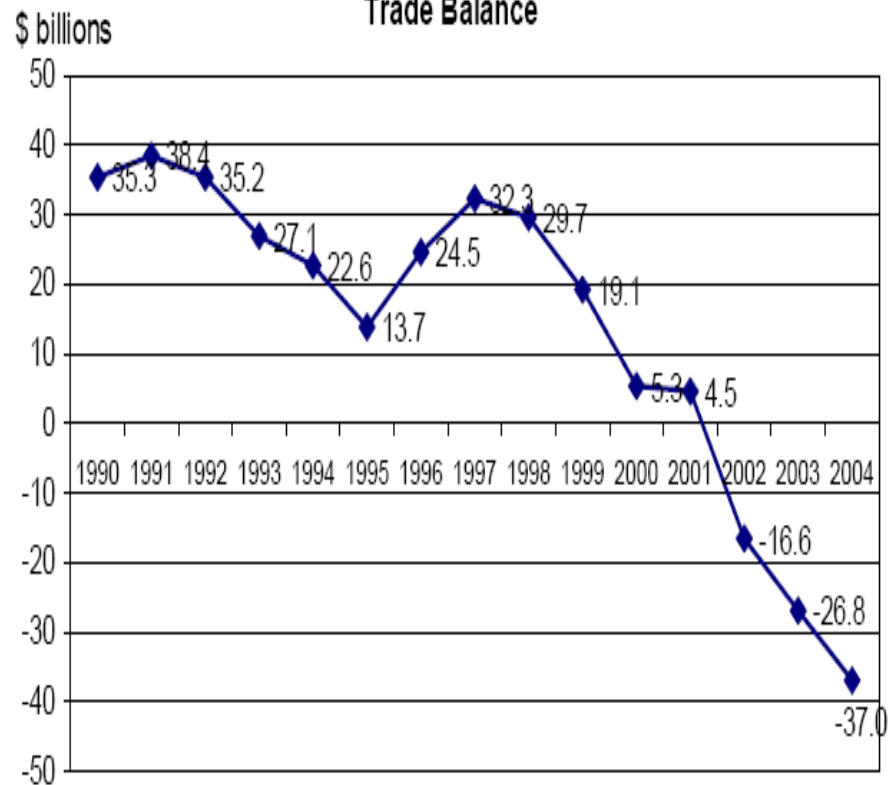
Engineering Doctoral Degrees
(thousands)



Source: National Science Foundation, 1990-2001; growth projections for 2005 and 2010 at annual rates of China plus 18 percent, the United States minus 2 percent, France, Germany, and the United Kingdom plus 3 percent, and Japan plus 6 percent.

The U.S. Advanced Technology Products (ATP)

Trade Balance



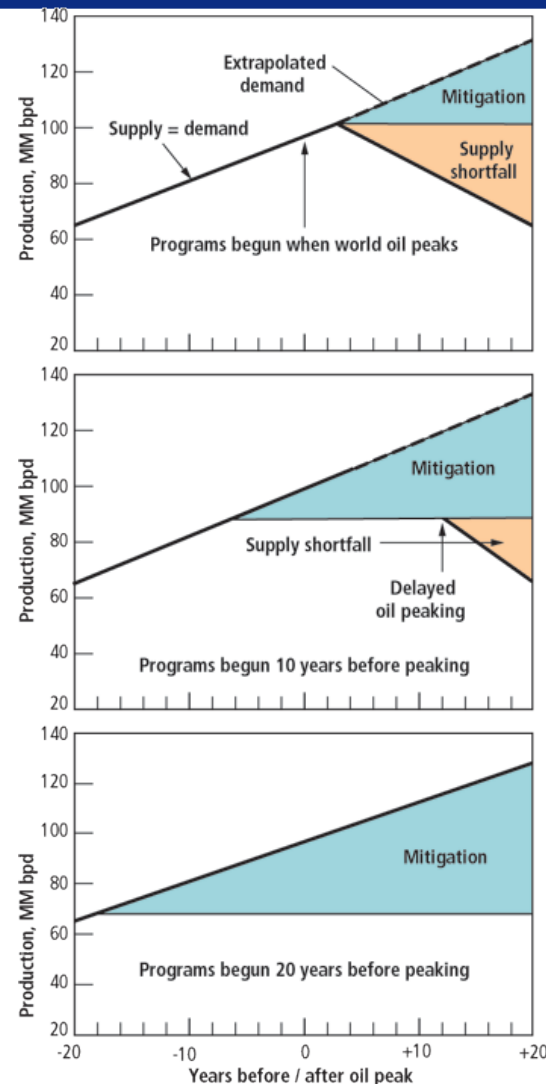
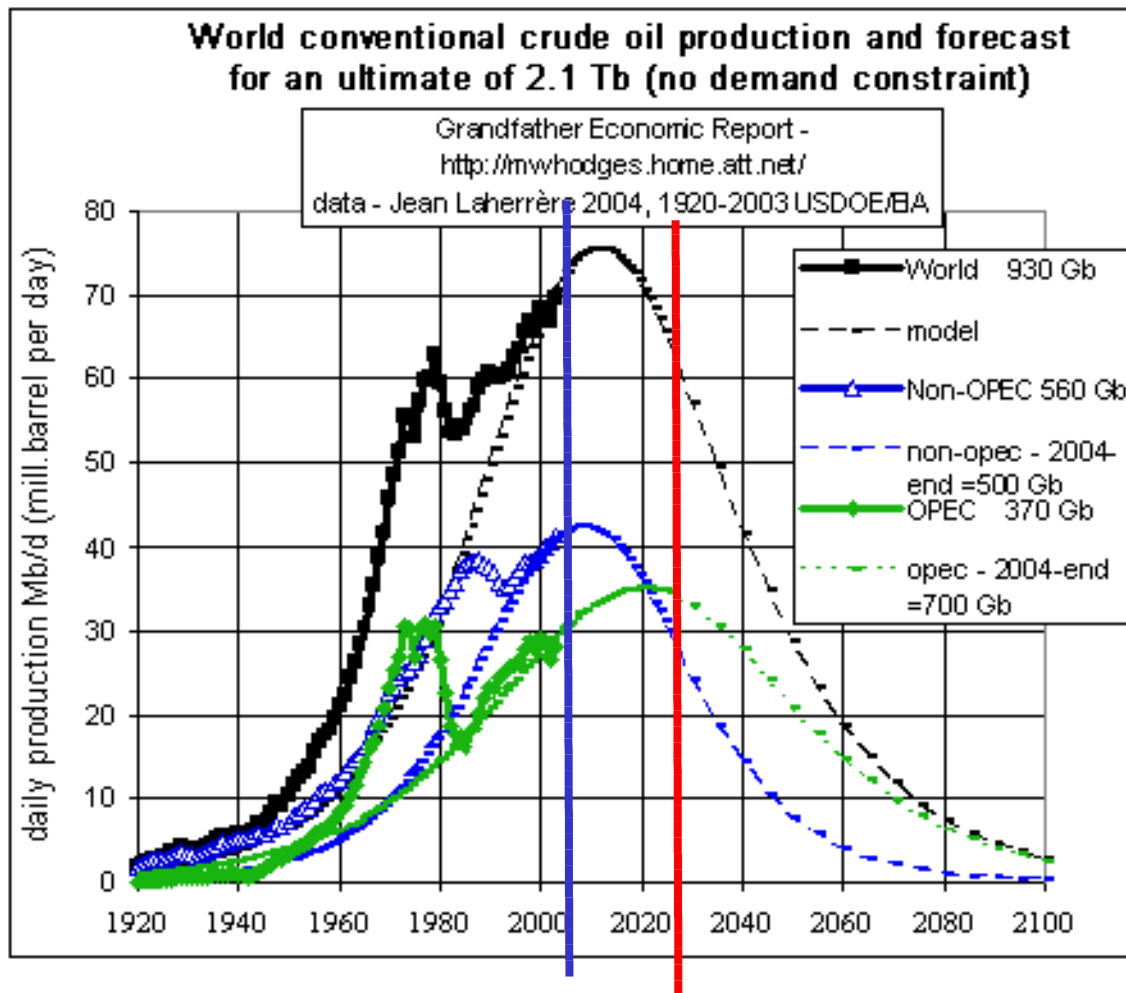
Source: U.S. Census Bureau.



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Oil production has peaked and new sources are in demand...

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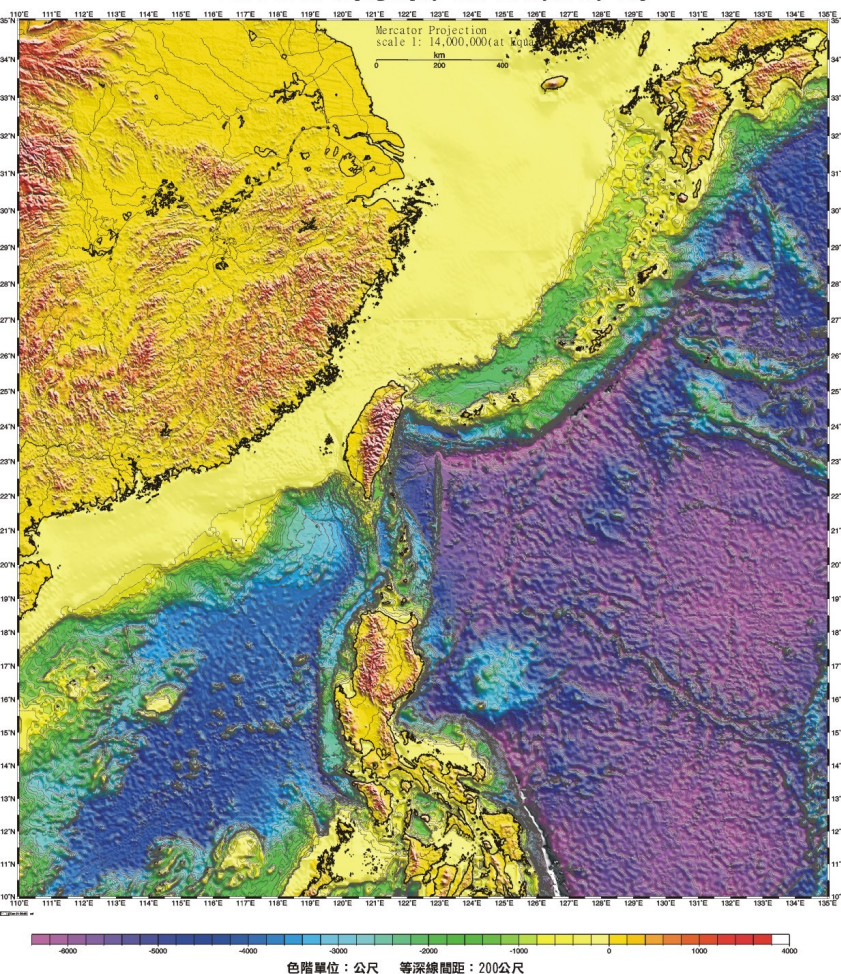
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Scenario Background

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東亞陸地與海底地形圖

East Asia Topography and Bathymetry Map



資料來源：MEST (NOAA/NGDC)
GTOPO30 (USGS)
ETOPO5 (NOAA/NGDC)
TaiDBMv6 (NCOR/ODB)



國科會海洋科學研究中心海洋資料庫
Ocean Data Bank
National Center for Ocean Research
<http://duck2.oc.ntu.edu.tw/>

ODB_CD0003:topo/EAbathy_topo.grdint_1am.v3.grd

編製日期：1999年2月



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Scenario

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- **The undersea resources in the East-China sea are in dispute by Japan and China**
- **An incident occurs that involves some hostilities between Japanese and Chinese ships**
- **China begins a show of force and claims it will occupy and maintain its sole claim**
- **Japan requests U.S. assistance and a show of force**
- **China counters that this is internal, and if the US begins to mass forces in the region, it will take out our regional bases with its theater missile capability**

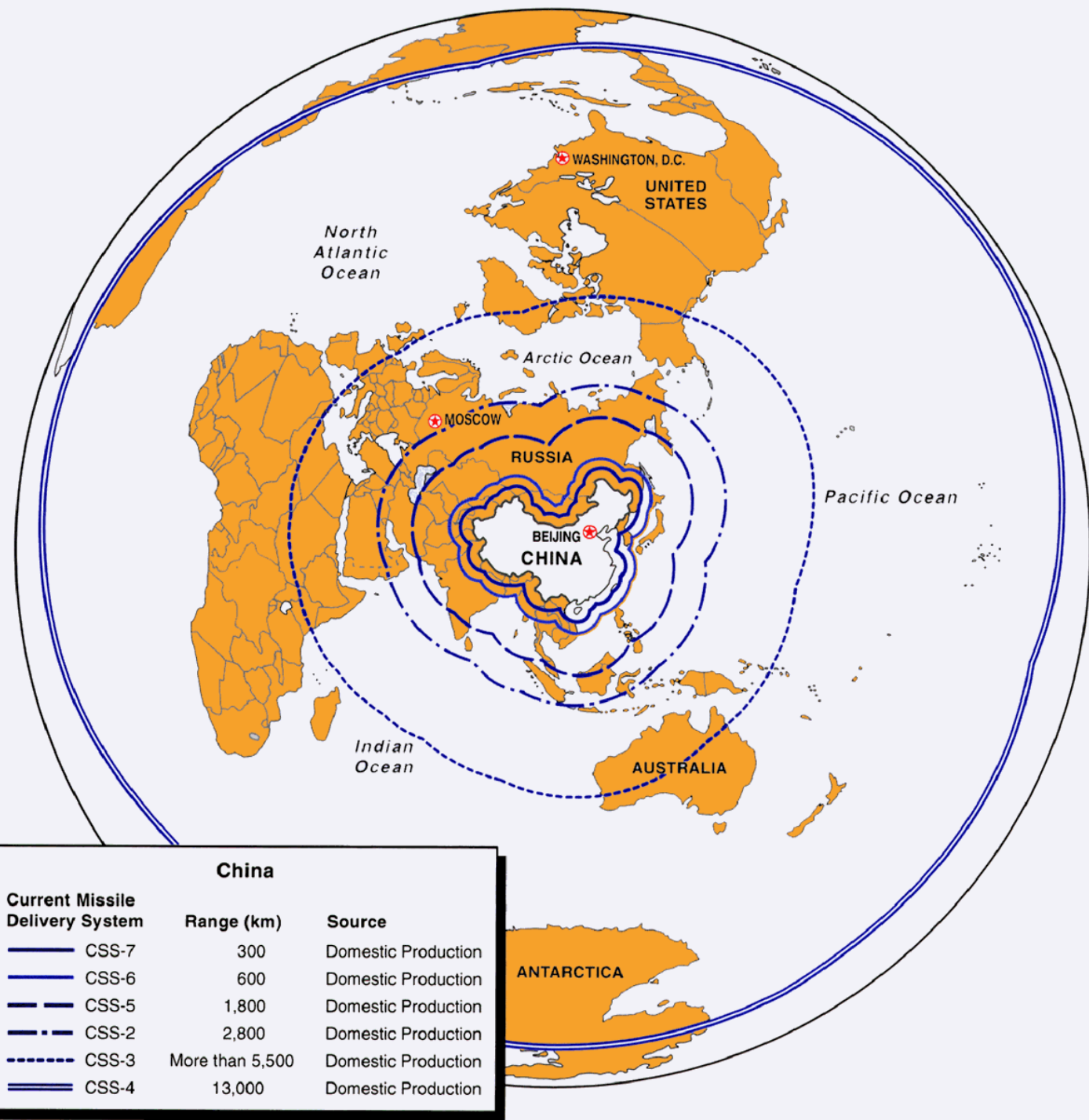




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■ Source:
■ www.fas.org



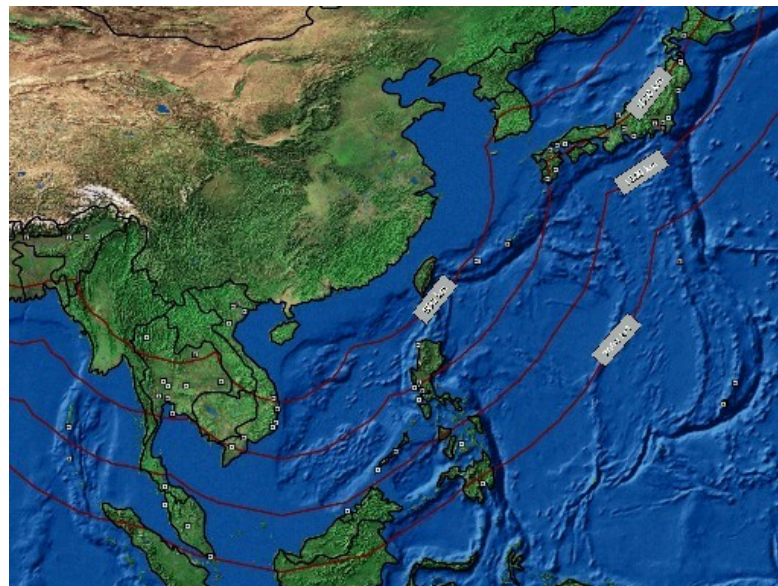


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Scenario Challenges

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- Access
- Mobility
- Capability and Capacity (Availability) of Forces
- Policy Constraints (overflight, Rules of Engagement, coalition building, etc.)



What capabilities are needed to achieve objectives? How would USAF provide those capabilities?



The Question

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- **The President has told his cabinet this situation is intolerable, and the US must respond, and has asked for inputs**
- **You are the Secretary of Defense charged with looking at military options**

What would be your key objectives & what course of action would you recommend?

-What types of capabilities will you require to accomplish it?



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Answers

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Consequences

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- **What are the Consequences of your decision?**
 - **Other Agencies, US Policy & Place in the World?**
 - **Key Allies and Adversaries?**
 - **Budget and Procurement?**
 - **Precedent for Future Actions?**
 - **Risk to US Lives and Wealth?**



Conclusion

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- **Wargames *suggest* or *compel* but do not *prove* or *validate***
- **Conclusions lead to further analysis (modeling & simulation, experimentation)**

[illegible]

Operation Ira

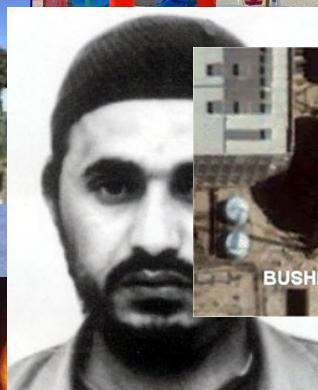
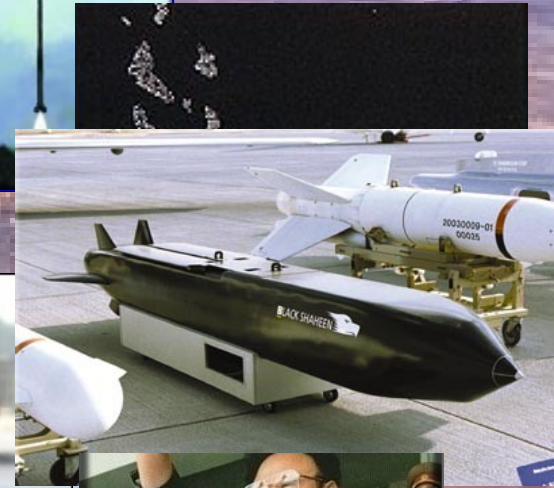


GUARDED
SIGNIFICANT RISK OF
TERRORIST ATTACK

GUARDED
MODERATE RISK OF
TERRORIST ATTACK

LOW
LOW RISK OF
TERRORIST ATTACK

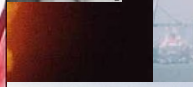
HIGH
HIGH RISK OF
TERRORIST ATTACK



BUSHEHR-2



The Dear Leader KIM JONG IL



GPS Summer



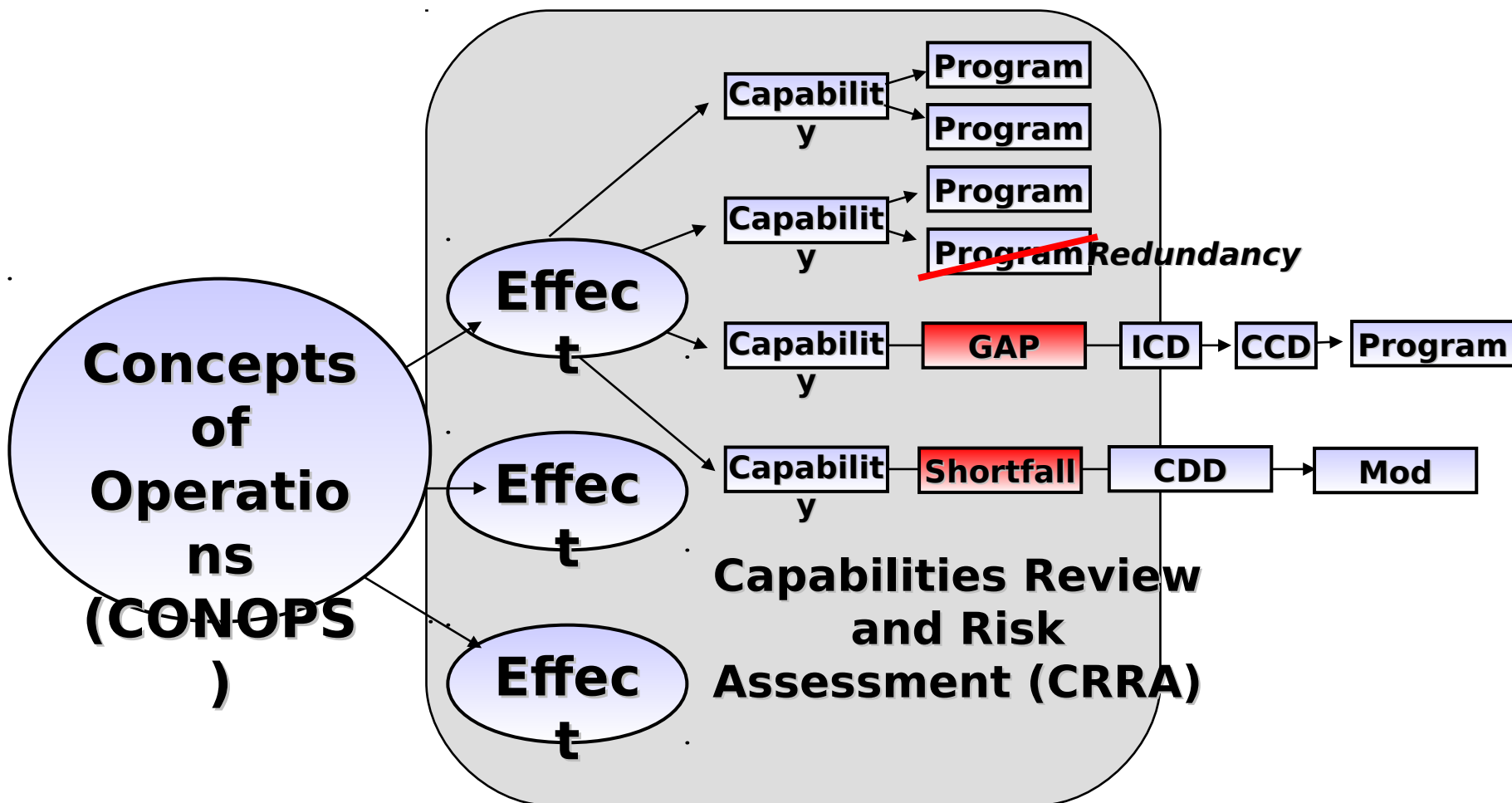


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Capabilities Based Planning



A continuous process to find the right capability mix

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AF Distinctive Capabilities

Right force...
...anywhere,
anytime

**The Nation's Joint Air & Space
Dominance cannot be assumed**

Worldwide
vigilance
and
awareness

Persistent C4ISR

Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance

Global Mobility

Rapid Strike

Tactical,
operational,
and strategic
effects



...for only 5¢ on the
Federal dollar

**We provide 3 strategic capabilities that allow us
to mitigate the four persistent and emerging
challenges: Traditional, Irregular, Catastrophic,
and Disruptive**



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Transformational Capabilities

***(Binned by AF Vision Distinctive
Capabilities)***

■ **Information Superiority**

- **Joint Machine-to-Machine Integration**
- **Integrated Air Picture**
- **Predictive Battlespace Awareness**
- **Assured Information Access**
- **Information Denial**

■ **Air and Space Superiority**

- **Penetration/defeat of advanced air defense systems**
- **Persistent Standoff**
- **Assured Space Use**
- **Enemy Space Denial**
- **Missile Defense**

■ **Precision Engagement**

- **More targets per sortie - reduced collateral damage**
- **Effects based targeting**

■ **Global Attack**

- **Worldwide attack within hours**

■ **Rapid Global Mobility**

- **Right forces, right place, right time**
- **On demand Space Launch and Operations**

■ **Agile Combat Support**

- **Light, lean, fast, persistent**